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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,524	BALCHANDRAN ET AL.	
	Examiner	Art Unit	
	Natalie Lennox	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *October 1, 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10* is/are allowed.

6)☒ Claim(s) *1-9 and 11-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *May 24, 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9 and 11-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Chapados et al. (US Patent 6,356,869).

As per claim 1, Chapados et al. teach a method of processing user dialogue in a natural language, mixed-initiative system, comprising the steps of:

receiving a user input (Col. 9, lines 59-64 demonstrate an example of a dialog fragment wherein lines 61-62 show the first user input);

determining whether the user input specifies an action to be performed or a token of an action(Col. 5, lines 48-56, "The conversation analysis operation 206 incorporates the contents of the context-dependent data into the state of the conversation. More precisely, the conversation analysis operation 206 keeps track of how this new context-dependent data should affect the system and the knowledge the system has of the user's goals. A second aspect of this operation is the determination of action data elements defining the next action the discourse management processor unit 104 should take as a result." The context-dependent data is interpreted by the examiner hereinafter as "tokens."); and

selectively routing the user input to an action interpreter or a token interpreter according to said determining step (Col. 7, lines 65-67, "Conversation analyzer 404 is modeled using a finite-state machine (FSM) that is made up of a set of states, connected together by transitions." Col. 3, lines 20-27 define "permanent transition" and "temporary transition" wherein the permanent transition is used to designate a transition in a finite state machine that is independent of the context of a conversation and the temporary transition is used to designate a transition in a finite state machine that is dependent of the context of the conversation. According to the example of Col. 9, lines 59-64, at Col. 10, lines 6-11, "permanent transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve." Examiner interprets the permanent transition as an action interpreter. Also the temporary transitions 516, 518, and 520 from Col. 10, lines 16-38, which are created or enabled specifically for the purpose of understanding the current dialog turn (Col. 10, lines 55-57), examiner interprets them as being token interpreters.).

As per claim 2, Chapados et al. teach the method of claim 1, said routing step further comprising:

classifying a token determined from the user input (Col. 7, lines 65-67, "Conversation analyzer 404 is modeled using a finite-state machine (FSM) that is made up of a set of states, connected together by transitions." Col. 9, lines 7-10, "Transition rules are usually activated upon encountering specific pieces of information in the

logical form information data elements extracted from the user's utterance." "Temporary transition" is defined as a transition in a finite state machine that is dependent of the context of a conversation (Col. 3, lines 25-27). Examiner interprets context-dependent data as "tokens." In other words, when encountering specific pieces of information from context dependent data or tokens a temporary transition rule is activated.); and

routing the token to one of a plurality of token interpreters according to said classifying step (Temporary transitions 516, 518, and 520 from Col. 10, lines 16-38, are created or enabled specifically for the purpose of understanding the current dialog turn (Col. 10, lines 55-57)).

As per claim 3, Chapados et al. teach the method of claim 2, wherein the classifying step identifies the token according to an action identified by the system, an action corresponding to a current state of a system, a category of the user input, a particular domain, or sub-domain (Col. 8, lines 49-60, "The CD (context dependent) state transition rules define new transitions in the finite state machine (FSM) that are temporarily added for the purpose of interpreting a specific user response. An advantage of these CD state transition rules is that the behavior followed when a transition is taken can depend on the context of the dialogue. Context-dependent state transition rules may be applied in many aspects of the conversation analyzer. In a specific example, context-dependent state transition rules are used to provide the discourse manager with "implicit confirmation" ability in a room reservation system," wherein the implicit confirmation is interpreted as an action corresponding to a current state of a system)).

As per claim 4, Chapados et al. a method of processing user dialogue in a natural language, mixed-initiative system, comprising the steps of:

receiving a first user input specifying an action (Col. 9, lines 59-64 demonstrate an example of a dialog fragment wherein lines 61-62 show the first user input specifying the action "I want a room for ten people tomorrow afternoon.") ;

providing said first user input to a processor configured to determine an action from received user input (Col. 10, lines 6-11, "Permanent Transition 508. This transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve," wherein the transition occurs in the finite state machine. Col. 5, lines 57-64, "the conversation analysis operation 206 is carried out at least in part by a finite state machine. [...] Following this, the action data elements are processed by the problem solving operation 208. The problem solving operation 208 issues commands to perform the appropriate action);

receiving a second user input (Col. 9, lines 59-64, shows a dialogue fragment where sentence 2 is the first user input. (Col. 9, lines 65-67, "The FSM illustrated in Fig. 5 is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse manager) identified as sentence 3 above." Temporary transitions 516, 518, and 520 from Col. 10, lines 16-37 define transitions that would be taken given a second user input for specific token classes, and permanent transitions 510, 512, 514, and 526 from Col. 10, lines 38-42 and lines 12-15, are

transitions that would be taken given a second user input "used for service requests other than making a reservation" or "used to fill the private memory area of discourse reserve 602 with room, date, and time information specified by the user when transition 516, 518, and 520 do not apply.");

determining whether the second user input specifies an action or a token corresponding to an action (Col. 9, lines 65-67, "The FSM illustrated in Fig. 5 is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse manager) identified as sentence 3 above." This would be the second user input. The determination whether the input is an action or a token of an action is made by the conversation analyzer 404 which is modeled using the finite-state machine (FSM) made up of a set of states connected together by transitions (Col. 7, lines 65-67) and wherein the transitions may be permanent or temporary wherein the permanent transition are context independent (actions) and temporary transitions are context dependent (tokens) (Col. 3, lines 20-29)); and

providing the second user input to the processor configured to determine an action or to a processor configured to determine a token from received user input according to said determining step (For the example of Col. 9, lines 59-64, there is a finite-state machine illustrated in Fig. 5, which is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse management) identified as sentence 3 in the example (Col. 9, lines 65-67). Also on Col. 10, lines 6-53, there is a list of available transitions according to the user's utterance. These transitions are either permanent or temporary, wherein the "permanent transition"

is used to designate a transition in a finite state machine that is independent of the context of a conversation (actions) and the "temporary transition" is used to designate a transition in a finite state machine that is dependent of the context of a conversation (token) (Col. 3, lines 20-27)).

As per claim 5, Chapados et al. teach the method of claim 4, further comprising the step of performing the action specified by the first user input (Col. 10, lines 6-11, "Permanent Transition 508. This transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve," wherein the transition occurs in the finite state machine. Col. 5, lines 57-64, "the conversation analysis operation 206 is carried out at least in part by a finite state machine. [...] Following this, the action data elements are processed by the problem solving operation 208. The problem solving operation 208 issues commands to perform the appropriate action.).

As per claim 6, Chapados et al. teach the method of claim 4, further comprising the step of determining that the second user input specifies a second action to be performed (Permanent Transitions to other states 526 on Col. 10, lines 12-15, are transitions that may have been used, "after the first user request", to service requests other than making a reservation. This applies to the example of a dialogue fragment on Col. 9, lines 51-64, where making a reservation was the first user request).

As per claim 7, Chapados et al. teach the method of claim 4, further comprising the steps of, after said step of providing the first user input to a processor, determining that a token is required to perform the action specified by the first user input and querying the user for the token (Col. 11, lines 29-35, "Prompt generator 408 receives the results from the problem solver 406 and formulates a response or prompt to advance in the completion of the user's goal. For example, if the problem solver determines that the time for the reservation is missing, the prompt generator will generate a prompt that will request from the user the time such as "At what time would you like to reserve the room?"").

As per claim 8, Chapados et al. teach a natural language, mixed-initiative system comprising:

an action interpreter configured to determine an action from a user input (Given the example of Col. 9, lines 59-64 and Fig. 5, user request or sentence #2: "I want a room for ten people tomorrow afternoon," the "permanent transition 508" detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting request to reserve (Col. 10, lines 6-11));

a token interpreter configured to determine a token from a user input to be used in performing an action (Context-dependent state transition rules (or Temporary transitions 516, 518, and 520 from Fig. 5) define new transitions in the finite state machine that are temporarily added to the finite state machine for the purpose of interpreting a specific user response (token) (Col. 2 line 67 to Col. 3 line 3). These are

created or enabled specifically for the purpose of understanding the current dialogue turn, and are destroyed afterwards. Advantageously, these temporary context dependent state transition rules permit the transition rules to be very specific to the current context of the dialogue (Col. 10, lines 54-60)); and

a main menu detector configured to distinguish a user input specifying a requested action from a user input specifying a token for performing an action, wherein said main menu detector routes user inputs specifying actions to said action interpreter and user inputs specifying tokens to said token interpreter (Discourse management (DM) unit of the dialog management apparatus performs the understanding of the input request in the context of a certain conversation. For each input utterance by a user, a set of operations are performed by the discourse management unit to derive from the logical form input received from a natural language understanding (NLU) unit the response to be outputted back to the user (Col. 2, lines 36-43). Depending on the user's response to a given prompt, the focus (used to designate the active state of a finite state machine (Col. 3, lines20-22)) can change from state to state following the direction set by transition rules 416 and 418. These transition rules may be context dependent state transition rules 416 or permanent transition rules 418, wherein the permanent transition rules 418 are defined by a set of transitions dependent on the state but independent on the context of the conversation (actions). Conversely, context dependent state transition rules 416 depend on the context of the conversation and are dynamically generated (Col. 8, lines 31-44)).

As per claim 9, Chapados et al. teach the system of claim 8, wherein said action interpreter further determines a token from the user input provided to said action interpreter (Temporary transitions 516, 518, and 520 from Fig. 5, as defined on Col. 10, lines 15-38, and following the example of Col. 9, lines 59-64, make their transitions from and to the state discourse reserve 500. These transitions are specific to the current context. These could be either a confirmation (temporary transition 516), a user-specified time wherein the system may supply the remaining implicit information (temporary transition 518), or other rules specific to the current context (temporary transition 520)).

As per claim 11, Chapados et al. teach a natural language, mixed-initiative system comprising:

means for receiving a user input (Col. 9, lines 59-64 demonstrate an example of a dialog fragment wherein lines 61-62 show the first user input);

means for determining whether the user input specifies an action to be performed or a token of an action (Col. 5, lines 48-56, "The conversation analysis operation 206 incorporates the contents of the context-dependent data into the state of the conversation. More precisely, the conversation analysis operation 206 keeps track of how this new context-dependent data should affect the system and the knowledge the system has of the user's goals. A second aspect of this operation is the determination of action data elements defining the next action the discourse management processor unit 104 should take as a result." The context-dependent data is interpreted by the examiner hereinafter as "tokens."); and

means for selectively routing the user input to an action interpreter or a token interpreter according to operation of said means for determining (Col. 7, lines 65-67, "Conversation analyzer 404 is modeled using a finite-state machine (FSM) that is made up of a set of states, connected together by transitions." Col. 3, lines 20-27 define "permanent transition" and "temporary transition" wherein the permanent transition is used to designate a transition in a finite state machine that is independent of the context of a conversation and the temporary transition is used to designate a transition in a finite state machine that is dependent of the context of the conversation. According to the example of Col. 9, lines 59-64, at Col. 10, lines 6-11, "permanent transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve." Examiner interprets the permanent transition as an action interpreter. Also the temporary transitions 516, 518, and 520 from Col. 10, lines 16-38, which are created or enabled specifically for the purpose of understanding the current dialog turn (Col. 10, lines 55-57), examiner interprets them as being token interpreters.).

As per claim 12, Chapados et al. teach the system of claim 11, said routing step further comprising:

means for classifying a token determined from the user input (Col. 7, lines 65-67, "Conversation analyzer 404 is modeled using a finite-state machine (FSM) that is made up of a set of states, connected together by transitions." Col. 9, lines 7-10, "Transition rules are usually activated upon encountering specific pieces of information in the

logical form information data elements extracted from the user's utterance." "Temporary transition" is defined as a transition in a finite state machine that is dependent of the context of a conversation (Col. 3, lines 25-27). Examiner interprets context-dependent data as "tokens." In other words, when encountering specific pieces of information from context dependent data or tokens a temporary transition rule is activated.); and

means for routing the token to one of a plurality of token interpreters according to said classifying step (Temporary transitions 516, 518, and 520 from Col. 10, lines 16-38, are created or enabled specifically for the purpose of understanding the current dialog turn (Col. 10, lines 55-57)).

As per claim 13, Chapados et al. teach the system of claim 12, wherein the means for classifying identifies the token according to an action identified by the system, an action corresponding to a current state of a system, a category of the user input, a particular domain, or sub-domain (Col. 8, lines 49-60, "The CD (context dependent) state transition rules define new transitions in the finite state machine (FSM) that are temporarily added for the purpose of interpreting a specific user response. An advantage of these CD state transition rules is that the behavior followed when a transition is taken can depend on the context of the dialogue. Context-dependent state transition rules may be applied in many aspects of the conversation analyzer. In a specific example, context-dependent state transition rules are used to provide the discourse manager with "implicit confirmation" ability in a room reservation system," wherein the implicit confirmation is interpreted as an action corresponding to a current state of a system)).

As per claim 14, Chapados et al. teach a natural language, mixed-initiative system comprising:

means for receiving a first user input specifying an action (Col. 9, lines 59-64 demonstrate an example of a dialog fragment wherein lines 61-62 show the first user input specifying the action "I want a room for ten people tomorrow afternoon.");

means for providing said first user input to a processor configured to determine an action from received user input (Col. 10, lines 6-11, "Permanent Transition 508. This transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve," wherein the transition occurs in the finite state machine. Col. 5, lines 57-64, "the conversation analysis operation 206 is carried out at least in part by a finite state machine. [...] Following this, the action data elements are processed by the problem solving operation 208. The problem solving operation 208 issues commands to perform the appropriate action);

means for receiving a second user input (Col. 9, lines 59-64, shows a dialogue fragment where sentence 2 is the first user input. (Col. 9, lines 65-67, "The FSM illustrated in Fig. 5 is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse manager) identified as sentence 3 above." Temporary transitions 516, 518, and 520 from Col. 10, lines 16-37 define transitions that would be taken given a second user input for specific token classes, and permanent transitions 510, 512, 514, and 526 from Col. 10, lines 38-42 and lines 12-15,

are transitions that would be taken given a second user input "used for service requests other than making a reservation" or "used to fill the private memory area of discourse reserve 602 with room, date, and time information specified by the user when transition 516, 518, and 520 do not apply.");

means for determining whether the second user input specifies an action or a token corresponding to an action (Col. 9, lines 65-67, "The FSM illustrated in Fig. 5 is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse manager) identified as sentence 3 above." This would be the second user input. The determination whether the input is an action or a token of an action is made by the conversation analyzer 404 which is modeled using the finite-state machine (FSM) made up of a set of states connected together by transitions (Col. 7, lines 65-67) and wherein the transitions may be permanent or temporary wherein the permanent transition are context independent (actions) and temporary transitions are context dependent (tokens) (Col. 3, lines 20-29)); and

means for providing the second user input to the processor configured to determine an action or to a processor configured to determine a token from received input according to operation of said means for determining (For the example of Col. 9, lines 59-64, there is a finite-state machine illustrated in Fig. 5, which is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse management) identified as sentence 3 in the example (Col. 9, lines 65-67). Also on Col. 10, lines 6-53, there is a list of available transitions according to the user's utterance. These transitions are either permanent or temporary, wherein the

"permanent transition" is used to designate a transition in a finite state machine that is independent of the context of a conversation (actions) and the "temporary transition" is used to designate a transition in a finite state machine that is dependent of the context of a conversation (token) (Col. 3, lines 20-27)).

As per claim 15, Chapados et al. teach a machine readable storage, having stored thereon a computer program for implementing a natural language, mixed-initiative system, said computer program having a plurality of code sections executable by a machine for causing the machine to perform the steps of:

receiving a user input (Col. 9, lines 59-64 demonstrate an example of a dialog fragment wherein lines 61-62 show the first user input);

determining whether the user input specifies an action to be performed or a token of an action (Col. 5, lines 48-56, "The conversation analysis operation 206 incorporates the contents of the context-dependent data into the state of the conversation. More precisely, the conversation analysis operation 206 keeps track of how this new context-dependent data should affect the system and the knowledge the system has of the user's goals. A second aspect of this operation is the determination of action data elements defining the next action the discourse management processor unit 104 should take as a result." The context-dependent data is interpreted by the examiner hereinafter as "tokens."); and

selectively routing the user input to an action interpreter or a token interpreter according to said determining step (Col. 7, lines 65-67, "Conversation analyzer 404 is modeled using a finite-state machine (FSM) that is made up of a set of states,

connected together by transitions." Col. 3, lines 20-27 define "permanent transition" and "temporary transition" wherein the permanent transition is used to designate a transition in a finite state machine that is independent of the context of a conversation and the temporary transition is used to designate a transition in a finite state machine that is dependent of the context of the conversation. According to the example of Col. 9, lines 59-64, at Col. 10, lines 6-11, "permanent transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve." Examiner interprets the permanent transition as an action interpreter. Also the temporary transitions 516, 518, and 520 from Col. 10, lines 16-38, which are created or enabled specifically for the purpose of understanding the current dialog turn (Col. 10, lines 55-57), examiner interprets them as being token interpreters.).

As per claim 16, Chapados et al. teach the machine readable storage of claim 15, said routing step further comprising:

classifying a token determined from the user input (Col. 7, lines 65-67, "Conversation analyzer 404 is modeled using a finite-state machine (FSM) that is made up of a set of states, connected together by transitions." Col. 9, lines 7-10, "Transition rules are usually activated upon encountering specific pieces of information in the logical form information data elements extracted from the user's utterance." "Temporary transition" is defined as a transition in a finite state machine that is dependent of the context of a conversation (Col. 3, lines 25-27). Examiner interprets context-dependent

data as "tokens." In other words, when encountering specific pieces of information from context dependent data or tokens a temporary transition rule is activated.); and

routing the token to one of a plurality of token interpreters according to said classifying step (Temporary transitions 516, 518, and 520 from Col. 10, lines 16-38, are created or enabled specifically for the purpose of understanding the current dialog turn (Col. 10, lines 55-57)).

As per claim 17, Chapados et al. teach the machine readable storage of claim 16, wherein the classifying step identifies the token according to an action identified by the system, an action corresponding to a current state of a system, a category of the user input, a particular domain, or sub-domain (Col. 8, lines 49-60, "The CD (context dependent) state transition rules define new transitions in the finite state machine (FSM) that are temporarily added for the purpose of interpreting a specific user response. An advantage of these CD state transition rules is that the behavior followed when a transition is taken can depend on the context of the dialogue. Context-dependent state transition rules may be applied in many aspects of the conversation analyzer. In a specific example, context-dependent state transition rules are used to provide the discourse manager with "implicit confirmation" ability in a room reservation system," wherein the implicit confirmation is interpreted as an action corresponding to a current state of a system)).

As per claim 18, Chapados et al. teach a machine readable storage, having stored thereon a computer program for implementing a natural language, mixed-

initiative system, said computer program having a plurality of code sections executable by a machine for causing the machine to perform the steps of:

receiving a first input specifying an action (Col. 9, lines 59-64 demonstrate an example of a dialog fragment wherein lines 61-62 show the first user input specifying the action "I want a room for ten people tomorrow afternoon.");

providing said first user input to a processor configured to determine an action from received user input ((Col. 10, lines 6-11, "Permanent Transition 508. This transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve," wherein the transition occurs in the finite state machine. Col. 5, lines 57-64, "the conversation analysis operation 206 is carried out at least in part by a finite state machine. [...] Following this, the action data elements are processed by the problem solving operation 208. The problem solving operation 208 issues commands to perform the appropriate action);

receiving a second user input (Col. 9, lines 59-64, shows a dialogue fragment where sentence 2 is the first user input. (Col. 9, lines 65-67, "The FSM illustrated in Fig. 5 is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse manager) identified as sentence 3 above." Temporary transitions 516, 518, and 520 from Col. 10, lines 16-37 define transitions that would be taken given a second user input for specific token classes, and permanent transitions 510, 512, 514, and 526 from Col. 10, lines 38-42 and lines 12-15, are

transitions that would be taken given a second user input "used for service requests other than making a reservation" or "used to fill the private memory area of discourse reserve 602 with room, date, and time information specified by the user when transition 516, 518, and 520 do not apply.");

determining whether the second user input specifies an action or a token corresponding to an action (Col. 9, lines 65-67, "The FSM illustrated in Fig. 5 is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse manager) identified as sentence 3 above." This would be the second user input. The determination whether the input is an action or a token of an action is made by the conversation analyzer 404 which is modeled using the finite-state machine (FSM) made up of a set of states connected together by transitions (Col. 7, lines 65-67) and wherein the transitions may be permanent or temporary wherein the permanent transition are context independent (actions) and temporary transitions are context dependent (tokens) (Col. 3, lines 20-29)); and

providing the second user input to the processor configured to determine an action or to a processor configured to determine a token from received user input according to said determining step (For the example of Col. 9, lines 59-64, there is a finite-state machine illustrated in Fig. 5, which is used to interpret the user utterance that would come immediately after room suggestion given by the DM (discourse management) identified as sentence 3 in the example (Col. 9, lines 65-67). Also on Col. 10, lines 6-53, there is a list of available transitions according to the user's utterance. These transitions are either permanent or temporary, wherein the "permanent transition"

is used to designate a transition in a finite state machine that is independent of the context of a conversation (actions) and the "temporary transition" is used to designate a transition in a finite state machine that is dependent of the context of a conversation (token) (Col. 3, lines 20-27)).

As per claim 19, Chapados et al. teach the machine readable storage of claim 18, further causing the machine to perform the step of performing the action specified by the first user input (Col. 10, lines 6-11, "Permanent Transition 508. This transition was taken when interpreting the first user request (sentence 2 from example), wherein the transition detected that the user's intention was to make a reservation, and it switched from the initial state Null 502 to the state discourse reserve 500 used for interpreting requests to reserve," wherein the transition occurs in the finite state machine. Col. 5, lines 57-64, "the conversation analysis operation 206 is carried out at least in part by a finite state machine. [...] Following this, the action data elements are processed by the problem solving operation 208. The problem solving operation 208 issues commands to perform the appropriate action.).

As per claim 20, Chapados et al. teach the machine readable storage of claim 18, further causing the machine to perform the step of determining that the second user input specifies a second action to be performed (Permanent Transitions to other states 526 on Col. 10, lines 12-15, are transitions that may have been used, "after the first user request", to service requests other than making a reservation. This applies to the example of a dialogue fragment on Col. 9, lines 51-64, where making a reservation was the first user request).

As per claim 21, Chapados et al. teach the machine readable storage of claim 18, further causing the machine to perform the step of, after said step of providing the first user input to a processor, determining that a token is required to perform the action specified by the first user input and querying the user for the token (Col. 11, lines 29-35, "Prompt generator 408 receives the results from the problem solver 406 and formulates a response or prompt to advance in the completion of the user's goal. For example, if the problem solver determines that the time for the reservation is missing, the prompt generator will generate a prompt that will request from the user the time such as "At what time would you like to reserve the room?"").

Allowable Subject Matter

3. Claim 10 is allowed.

As per claim 10, there is no prior art reference, alone or in combination, that specifically teaches or suggests the limitation of "an action router configured to receive actions and tokens and selectively route actions and tokens to one of said plurality of token interpreters, a main menu detector configured to process context dependent data to distinguish user inputs specifying requested actions from user inputs specifying tokens for performing actions, wherein said main menu detector routes user inputs specifying actions to said action interpreter and user inputs specifying tokens to said action router, or a classifier configured to distinguish user inputs specifying context dependent data from user inputs specifying context independent data, wherein said classifier routes user inputs specifying context dependent data to said main menu

detector and user inputs specifying context independent data to said action interpreter, and wherein said action interpreter forwards actions to said action router," as cited in the claim. Prior art made of record, Chapados et al. (US Patent 6,356,869), teach a "discourse management unit that performs the understanding of an input request in the context of a certain conversation. For each input utterance by a user, a set of operations are performed by the discourse management unit to derive from the logical form input received from a natural language understanding (NLU) unit the response to be outputted back to the user. The discourse management unit makes use of an expectation handling unit and a conversation analyzer to provide the context dependent interpretation capability. The expectation handling unit maps the input data into data that is context dependent on the basis of dynamically generated remapping rules. The conversation analyzer receives the context-dependent data from the expectation handling unit and incorporates it into the state of the conversation. More precisely, the conversation analyzer keeps track of how the new context-dependent data should affect the system and the knowledge the system has of the user's goals" (Col. 2, lines 36-53). The conversation analyzer is modeled using a finite-state machine (FSM) made up of a set of states, connected together by transitions (Col. 7, lines 65-67). Depending on the user's response to a given prompt, the focus can change from state to state following the direction set by transition rules 416, 418, wherein the transition rules may be context dependent state transition rules 416, which depend on the context of the conversation, or permanent transition rules 418 that are defined by a set of transitions dependent on the state but independent on the context of the conversation (Col. 8, lines 31-46). This

reference differs from applicant's claimed invention in that even though the conversation analyzer distinguishes over context dependent or independent data (From Fig. 4, conversation analyzer 404 connected to context dependent state transition rules 416 and static state transition rules 418) it does not specifically route them to a main menu detector or action interpreter. Also this reference differs form applicant's claimed invention in that it does not have use for a main menu detector or action router as claimed.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5. Gupta et al. (US Patent 7,197,460) provides a system for handling frequently asked questions in a natural language dialog service.

6. Durston et al. (US 2003/0130849) provides an apparatus for interactive dialogues.

7. Gorin et al. (US 2003/0191625) provides a method and system for creating a named entity language model.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie Lennox whose telephone number is (571) 270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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